Lat 40.40073 Lon -121.63558

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File Code: 3400 Date: August 28, 1996

Subject: Annosus Root Disease in White Fir on Grays Peak (Report #NE96-13)

To: District Ranger, Almanor RD

White fir windthrow was detected in Stand 36 on Grays Peak, T30N R3E Sec3. At the request of Judy Welles, District Prep Forester, she and I conducted a field evaluation of the area on August 14.

Stand 36 is predominantly made up of white fir, about 80 years old. The area of windthrow appears to be less than five acres. Even though a considerable number of white fir were killed and down, a good stocking of healthy fir remained alive and distributed throughout the area.

The trees that blew over were killed by fir engraver bark beetles. Some of the windthrown trees had exposed roots which exhibited a white rot indicative of annosus root disease. This is not unusual, since much of the white fir in California is infected with Heterobasidion annosum, the fungus which causes the disease. Infected fir in understocked stands can usually outgrow the pathogen indefinitely. When infected fir becomes stressed (eg. from overstocking or during periods of below normal precipitation), annosus root disease can overcome the tree. Commonly though, white fir stressed by disease or competition is overcome by bark beetles, as seen in Stand 36.

It is wise to thin managed forest stands before overstocking and the subsequent mortality occurs. The mortality (windthrow) in Stand 36 is an example of the natural thinning process that occurs in unmanaged stands. This mortality can be greatly reduced in the rest of Stand 36, if the trees are thinned to the point where the residual trees are free of stress.

Some recently killed trees, in Stand 36, had ragged and thin crowns, while the residual trees generally have healthy full crowns. This characteristic can be used when selecting trees to thin from the stand. The common practice of favoring leave trees with the best crowns, will most likely leave the fir trees with the least annosus root disease.

If you need additional assistance, please contact me at 916-257-2151 ext.6680.

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